STATE GEOLOGICAL SURVEY DIVISION

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GEOLOGIC REPORT ON GROUNDWATER POSSIBILITIES AT AN AUTO LAUNDRY NEAR CHICAGO HEIGHTS, COOK COUNTY, 500 FEET EAST OF THE CENTER OF THE WEST LINE OF SEC. 19, T.35 N., R.14 E.

By

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This report concerns the geologic conditions controlling the occurrence of groundwater at the proposed site of an auto laundry west of Chicago Heights, near the intersection of the Lincoln Highway and Western Avenue, Cook County. This site is approximately 500 feet east of the center of the west line of Sec. 19, T.35 N., R.14 E. The report is prepared in response to the inquiry of Mr. C. J. Thiebeault, 710 Bruce Street, Flossmoor, Illinois.

The land in the area of the proposed auto laundry is gently rolling with an average elevation of approximately 700 feet, estimated from the Harvey quadrangle topographic map.

A summary log of the geologic sequence of formations which probably underlie the location follows.

System and Formation	Thickness	Depth of Base	Characteristics
Pleistocene system			
Unconsolidated glacial drift	65-95	65-95	Mostly tight pebbly clay. Sand and gravel beds generally thin
Silurian system			
Niagaran-Alexandrian dolomite	355-385	450	Water-yielding crevices encountered at most drilling sites
Ordovician system			
Maquoketa shale	240	690	Essentially non-water-yielding

The layer of unconsolidated glacial drift material which covers the solid bedrock of the area ranges in thickness from about 65 to 95 feet. The material is mostly pebbly clay and silt which is too tight to yield groundwater to small tubular drilled wells. Permeable and water-bearing sand and gravel beds suitable for screen-type tubular well construction are not abundant in the glacial drift of this area, and at many locations drilling penetrates to the solid bedrock without encountering any permeable water-bearing beds. Where permeable sand and gravel formations are discovered in the drift, however, consideration can be given the construction of a screen-type tubular well terminating above the solid bedrock.

Most of the wells in the area penetrate into the Niagaran-Alexandrian dolomite and tap groundwater from open crevices which seem to be abundant in this general area. Most of these shallow bedrock wells penetrate 50 to 200 feet into the rock. The standard method of construction of wells which tap groundwater from open crevices in the dolomite is to set casing through the thickness of the glacial drift and seat in the upper portion of the dolomite.

Inasmuch as the Maquoketa shale formation is essentially non-water-yielding in the Chicago Heights area, drilling should not penetrate deep into this formation unless the intention is to explore the groundwater yields of formations deeper than approximately 690 feet. We can describe the depths of the deep water-yielding formations, if requested, in the remote possibility that the well at the proposed auto laundry will need to be drilled deeper than the Niagaran-Alexandrian dolomite.